

Claims 1-13 are currently pending in this application, with claims 1, 6, 9, 11, and 13 being in independent form. It is submitted that no new matter has been added and no new issues have been raised by the present Request.

Claims 1-13 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,987,446 to Corey et al., in view of U.S. Patent No. 6,122,627 to Carey et al., and further in view of U.S. Patent No. 6,009,422 to Ciccarelli.

Claims 9 and 11 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Corey et al., in view of Carey et al., further in view of Ciccarelli, and further in view of U.S. Patent No. 6,085,188 to Bachmann et al.

Applicant has carefully considered the Examiner's comments and the cited art, and respectfully submits that independent claim 1 is patentable over the cited art for at least the following reasons.

Independent claim 1 relates to a method of processing a database service query, comprising: receiving a service query, applying principles of logic to the service query to obtain a sum of terms, evaluating each term as a separate SQL instruction, and executing each separate SQL instruction.

Corey et al., as understood by Applicant, relates to an information retrieval system for searching large collections of text using multiple search engines concurrently. The system includes a plurality of text search engines based on substantially different computational searching techniques. By activating each search engine with input from a user information request, output from each of the search engines is combined into a single list of information items, and a ranking process ranks the information items in the

combined list by utilizing information item ordering data also received from each of the search engines.

Carey et al., as understood by Applicant, relates to a system, method, and program for object building in queries over object views. The system, method, and program enable an object language application to issue a query over a view and to receive back, as query results, handles to application type objects which can be further manipulated by the application.

Ciccarelli, as understood by Applicant, relates to a system and method for query translation/semantic translation using generalized query language. The system and method translate a single search request or query across heterogeneous databases independent of the database search grammar(s). A client uses a process to express the query in a powerful programming language, i.e., Generalized Query Language (GQL) which has a wide variety of operators to specify the conditions of the query and enable a fused response to be provided by the databases. The process translates the query into phrases contained in a GQL and constructs a complex search query which bridges the gap between the query and the low level of functionality provided in search engines associated with the databases.

Preceding citation to Fig. 3A and col. 7, lns. 13-17, the Office Action states that "[a]s per independent claims 1, 13 Carey rendered by the following ... " (see Office Action, p. 2, lns. 13-16). It is respectfully submitted that it is unclear which reference is being referred to in the sections cited. Clarification is respectfully requested. In any event, Applicant submits that the element mentioned is not disclosed or suggested by any of the cited art, for at least the following reasons.

The Office Action states that "applying principles of logic to the service query to

obtain a sum of terms" is disclosed at Fig. 3A, and col. 7, lns. 47-67.

As understood by Applicant, col. 7, lns. 47-67 of Carey et al. relate to rules used to generate class definitions stored in an application file and view type definitions stored in the query engine catalogs.

Col. 7, lns. 47-67 of Corey et al., as understood by Applicant, relate to high level steps of a flowchart for processing performed by the literal search engine controller. An input query is used to generate a set of subqueries $\{Q_i\}$, $i=1 \dots n$, wherein each subquery Q_i is generated from the original input query. If Q is the original input query, then $Q=Q_1$ and each Q_i for i greater than 1 is a query having one or more query terms from Q removed.

Accordingly, it is submitted that neither Carey et al. nor Corey et al. alone or in combination, show or disclose applying principles of logic to a received service query to obtain a sum of terms, as recited in independent claim 1.

Furthermore, it is submitted that Ciccarelli, alone or in combination with either or both of Carey et al. and Corey et al., does not show or disclose applying principles of logic to a received service query to obtain a sum of terms, as recited in independent claim 1.

The Office Action further states that Corey et al. does not teach evaluating each SQL instruction (see Office Action, p. 2, ln. 17). Carey et al. is cited as allegedly disclosing the missing element.

As understood by Applicant, Carey et al. discloses a query graph that is used by an optimization phase (see Carey et al., col. 13, lns. 4-5). Each query is then translated into an executable plan, which may contain SQL queries if the data come from a relational database (see id., lns. 6-8). After translation, each query plan is passed to a query

evaluation subsystem, where SQL queries in the plan go to the relational DBMS (see id., lns. 8-10). However, if the data does not need to come from a relational database, then the query evaluation subsystem runs the plans against collections of objects (see id., lns. 11-14).

It is therefore submitted that neither Corey et al. nor Carey et al., alone or in combination, disclose evaluating each term as a separate SQL instruction, as recited in independent claim 1.

It is further submitted that Ciccarelli, alone or in combination with either or both of Corey et al. and Carey et al., does not disclose or suggest evaluating each term as a separate SQL instruction, as recited in independent claim 1.

Accordingly, Applicant submits that independent claim 1 is patentable over the cited art. Independent claim 9 is believed to be patentable over the cited art for at least similar reasons.

Regarding the rejection of independent claim 6, the Office Action cites col. 4, ln. 66 to col. 5, ln. 7 of Carey et al. as allegedly disclosing listing results of a subtracted SQL instruction in a first list and listing results of a non-subtracted SQL instruction in a second list (see Office Action, p. 3, ln. 20 to p. 4, ln. 3). Applicant respectfully disagrees.

The section of Carey et al. cited by the Office Action states only that "... query rewrite transformations and system-managed query optimization are essential features to ensure acceptable query performance" within any data management system. It is respectfully submitted, however, that Carey et al. does not disclose or suggest listing the results of a subtracted SQL instruction in a first list and listing results of a non-subtracted SQL instruction in a second list, as recited in independent claim 6.

The remainder of Carey et al. is likewise silent on this feature. Further, it is submitted that neither Corey et al. nor Ciccarelli, alone or in combination, disclose or suggest listing the results of a subtracted SQL instruction in a first list and listing results of a non-subtracted SQL instruction in a second list, as recited in independent claim 6.

Accordingly, Applicant submits that independent claim 6 is patentable over the cited art. Independent claim 11 is believed to be patentable over the cited art for at least similar reasons.

Regarding the rejection of Claim 13, it is respectfully submitted that neither Corey et al., Carey et al., nor Ciccarelli, alone or in combination, disclose or suggest translating a service query to an expression, simplifying the expression to a number of smaller expressions, each smaller expression being capable of being flattened, flattening each smaller expression, and executing each flattened expression, as recited in independent claim 13.

Regarding the additional rejection of claims 9 and 11 (see Office Action, p. 4, lns. 6-9), the Office Action cites Bachmann et al. as allegedly disclosing a directory service arrangement including a database using a plurality of tables, each table having a plurality of rows and columns, and storing arbitrary data.

Bachmann et al., as understood by Applicant, relates to a method of hierarchical LDAP searching in an LDAP directory service having a relational database management system (DBMS) as a backing store. Entries in a naming hierarchy are mapped into first and second relational tables: a parent table and a descendant table. These tables are used to filter lists of entries returned from a search to ensure that only entries within a given search scope are retained for evaluation.

For at least the reasons stated above, independent claims 9 and 11 are believed to be patentable over Corey et al., Carey et al., and Ciccarelli. It is respectfully submitted that Bachmann et al. does not disclose or suggest the elements missing from the above-mentioned references.

Accordingly, Applicant submits that the independent claims are patentable over the cited art.

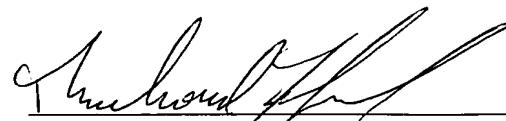
The Office is hereby authorized to charge any additional fees that may be required in connection with this response and to credit any overpayment to our Deposit Account No. 03-3125.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition, and the Commissioner is authorized to charge the requisite fees to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Entry of this response and allowance of this application are respectfully requested.

Respectfully submitted,



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